7.0 NATURAL GAS SUPPLY

Natural gas that serves California is produced in the Western Canadian Sedimentary Basin in Alberta and British Columbia, the San Juan Basin (the New Mexico and Colorado portions of the Four Corners area), the Permian Basin (west Texas), and the Rocky Mountains (southwestern Wyoming).

Approximately 7 billion cubic feet (Bcf) of natural gas can reach California each day through existing interstate pipelines that bring natural gas from the producing basins to the state line. More than half of this natural gas is from the San Juan and Permian Basins. Interstate pipelines interconnect with California's local natural gas distribution companies. Approximately 1 Bcf of additional natural gas is produced daily within various portions of the Sacramento Valley, the San Joaquin Valley, and Southern California.

Interstate pipelines, including El Paso Natural Gas, Transwestern, Kern River Gas Transmission, Pacific Gas Transmission, and Mojave, transport natural gas from producing basins to the state line.[1] Local distribution companies, such as Pacific Gas and Electric Company (PG&E) and Southern California Gas Company (SoCalGas), transport natural gas from the state line to customers. The California Public Utilities Commission (CPUC) regulates the natural gas transportation services.

Natural gas for the Henrietta Peaker Project (HPP) will be obtained from a SoCalGas pipeline (Line 800) located approximately one mile south of the Avenal Cutoff. SoCalGas will design, construct, own, operate, and maintain a 12-inch-diameter pipeline from the SoCalGas pipeline interconnection to the HPP site. This section describes the proposed natural gas pipeline route, natural gas quality, pipeline construction methods, pipeline operating procedures, and required permits.

7.1 The Proposed Route

The proposed natural gas pipeline route is approximately 2.2 miles long and is shown in Figure 2-2 (Project Description). It will tie into the SoCalGas Line 800 approximately

[1] Kern River and Mojave are actually interstate pipelines that cross the state line and deliver natural gas directly to customers in the southern San Joaquin Valley, near Bakersfield. They are the only interstate pipelines that currently operate within California.

one mile south of the Avenal Cutoff. A new, buried, 12-inch-diameter pipeline will travel north along the eastern side of an unimproved farm access road within an HPP easement. The line will pass beneath the Avenal Cutoff, proceed north along the eastern side of 25th Avenue within an existing SoCalGas easement, then turn east to enter the HPP site.

7.2 Alternative Routes

An alternative route, a line traveling along the unpaved farm road east of the HPP site, is longer and would involve permanent disturbance to agricultural land under Williamson Act contract. No other alternative routes for the natural gas pipeline have been identified by SoCalGas. The proposed route is the most direct route to the HPP site. Line 800 is the only main natural gas supply line in the area that could meet the needs of the HPP.

7.3 Natural Gas Quality

Natural gas delivered through intrastate pipelines must conform to certain quality specifications established by the local distribution company and approved by the CPUC. Natural gas delivered to the HPP will conform to the quality standards established in Section I of SoCalGas Rule No. 30, *Transportation of Customer-Owned Gas* and Section B, Rule No. 2, *Description of Service.* These rules include standards for heating value, moisture, hydrogen sulfide, mercaptan sulfur, total sulfur, carbon dioxide, oxygen, and inerts.

7.4 Construction Practices

Natural gas will be delivered to the project site through approximately 2.2 miles of new 12-inch-diameter pipeline. This pipeline will be buried under previously disturbed ground along or under existing surface roads in Kings County. Where the pipeline crosses a highway, a strip (approximately 32 inches wide) of the asphalt or concrete street surface will be saw-cut and removed. Where the pipeline is routed alongside an existing road, no hard surface will require cutting. The pipeline trench will be excavated using an excavator backhoe to an average depth of approximately 4 to 6 feet below grade.

The pipeline will be laid on a bed of sand that is approximately 4 inches deep. Sand will be tamped around the pipe until the pipe is covered by a 12-inch layer. Previously

excavated dirt will then be placed back in the trench and compacted in approximately 12-inch layers, until reaching either the level of the bottom of the road base or the surface of the existing grade.

Each dirt layer will be compacted according to American Society for Testing and Materials standard D1556 to a level of 95 percent. Where no road surface material is required, the pipeline installation will be complete. Where road material is required, road base course material (typically a gravel mix such as A/B fill) will be placed on top of the underlying dirt and compacted. Finally, an asphaltic or concrete road surface material will be installed to match the existing road thickness and surface. Asphaltic road surfaces will be completed with a seal coat to create a smooth, tough, resilient surface free of irregularities.

Warning signs will be installed along the length of the new natural gas pipeline route to warn of the pipeline presence.

7.5 Pipeline Operations

The proposed natural gas supply pipeline will be designed, constructed, and operated in accordance with Title 49, Code of Federal Regulations (CFR), Part 192 and CPUC General Order (GO) 112-E. Specifically, the design of the pipeline will comply with standards required for natural gas pipelines in proximity to populated areas, based on actual population densities along the proposed pipeline route.

An operations and maintenance plan will be prepared to address both normal procedures and conditions and any upsets or abnormal conditions that could occur. Periodic cathodic protection surveys will be performed along the pipeline, as required by 49 CFR 192 and GO 112-E. The pipeline will be operated with a continuous cathodic protection system.

A proactive damage prevention program will be adopted for the pipeline. Markers that identify the location of the pipeline will be placed at all road crossings. The markers will specify a toll-free number to call prior to any excavation in the vicinity of the pipeline. Buried warning tape will be placed above the pipeline to warn of its presence.

Natural gas received from the SoCalGas will be odorized. SoCalGas will own the pipeline and will develop an emergency plan to provide prompt and effective responses to upset conditions detected along the pipeline or reported by the public.

Isolation block-valves will be installed at both ends of the proposed pipeline. These valves will be manually controlled gate valves. SoCalGas will have access to the isolation block-valve at the mainline tap. SoCalGas will own and operate a metering facility to measure the natural gas supply to the HPP.

7.6 Permits

An encroachment permit will be obtained from Kings County Public Works Department. It is estimated that the permit could be obtained in one week (Reyes, 2001).

7.7 References

Southern California Gas Company, 1997. Rule No. 2, *Description of Service.*

Southern California Gas Company, 1997. Rule No. 30, *Transportation of Customer-Owned Gas.*

Reyes, 2001. Telephone communication with Jerry Reyes, Kings County Public Works Department and J. Adams, URS Corporation, June 13.

Wheeler, 2000. Personal communication from Doug Wheeler, Vice President, GWF Power Systems Company, Inc., to D. Stein, URS Corporation, March 29.